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ABSTRACT

0031 A method for reducing peeling of a cross-linked polymer passivation layer in a solder bump formation process including providing a multi-level semiconductor device formed on a semiconductor process wafer having an uppermost surface comprising a metal bonding pad in electrical communication with underlying device levels; forming a layer of resinous pre-cursor polymeric material over the process surface said resinous polymeric material having a glass transition temperature (T_g) upon curing; subjecting the semiconductor process wafer to a pre-curing thermal treatment temperature below T_g for a period of time; and, subjecting the semiconductor process wafer to at least one subsequent thermal treatment temperature above T_g for a period of time to form an uppermost passivation layer.